



INTRODUCTORY LESSON ON LICANCABUR

Prepared for Sixth Grade Earth Science

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Objective:

That through student investigation of the Extreme Environment website and classroom centers, students will understand the nature of the Licancabur project. The website reports the findings of the expedition as they seek to understand this biome's uniqueness and understand life under extreme conditions through a series of high-altitude expedition's lead by NASA scientists.

Higher level objectives:

Critical astro-biological information about the limits of life on Earth

Scientific clues about potential analogous sites on Mars

Elements to design science mission strategies for planetary exploration and search for life in the Solar System.

Background Information on Licancabur

The Licancabur volcano (6,014 m = 19,730.9711286 feet) located at the boundary of [Chile](#) and [Bolivia](#) hosts a lake that is amongst the highest and the least explored lakes on Earth. The lake environment combines low-oxygen, low atmospheric pressure, and high-UV radiation. Sediments are formed in volcanic material. It is ice-covered most of the year but the bottom water temperature remains above freezing. These conditions make Licancabur a unique analog (comparison) to ancient Martian lakes.

Time Allocation: 1.5 hours minimum

Exploration Phase sixty minutes: at 15 minutes per station

Summary Phase fifteen minutes: construction of poster and clean-up

Presentation Phase ten minutes: groups share poster of findings with class.

Station A

Review www.extremeenvironment.com

Each group takes a tab and reviews the respective contents. Print information and pictures of what you need to create a presentation poster later.

Materials: Computer

Station B

Review Kid's Corner with teacher

<http://www.extremeenvironment.com/2003/field/kids/index.htm>



Write down your questions and things you learned during the investigation
Materials: Computer, or print outs of "Kid Place" from website. Provide poster paper and marker pens.

Station C

Look through resources, text book, or your own ideas for a science project that reinforces the themes of this topic.

Materials: Support materials, activity books, text books, related articles, etc.

Station D

Paint in watercolor your impression of Licancabur.

Materials: Watercolor paints, painting paper, water and water container, masking tape for name label.

Wrap UP!

Make a poster highlighting what you learned today and present to class!

Materials: Poster paper, scissors, glue, markers, etc.

Student Internet Resources:

Northern California Link to Mount Lassen Volcanic Park

<http://www.nps.gov/lavo/>



Bumpass Hell

Join the Lassen Volcano Club

http://www.nps.gov/lavo/lassen_volcanocard.htm

Conversions

<http://www.onlineconversion.com/>

Words and Definitions

<http://www.m-w.com>